



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/827,141	04/06/2001	Gang He	AP639US	5105
7590 11/05/2003			EXAMINER	
Thomas Adams Thomas Adams & Assoc. P.O. Box 11100, Station H. Ottawa, ON K2H 7T8 CANADA			TURNER, SAMUEL A	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/827,141

Applicant(s)

HE ET AL.

Examiner

Samuel A. Turner

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 and 30-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 12-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. § 121:

- I. Claims 1-11, and 30-36 are, drawn to a tunable optical filter, classified in class 359, subclass 578.
- II. Claims 12-29, drawn to a spectrum analyzer, classified in class 356, subclass 453.

The inventions are distinct, each from the other because:

Inventions I and II are related as combination and subcombination.

Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because any polarization sensitive tunable filter would meet the claimed limitation in claim 12. The subcombination has separate utility such as any tunable filter means.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, have acquired a separate status in the art because of their recognized divergent subject

matter, and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

Applicant's election with traverse of claims 12-29 in Paper No. 4 is acknowledged. The traversal is on the ground(s) that the examination of claims 1-36 would not impose an undue burden on the examiner. This is not found persuasive because the allowability of any claim is based on all the limitations of said claim, thus the search for the spectrum analyzer would not include a specific search for just the tunable optical filter.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

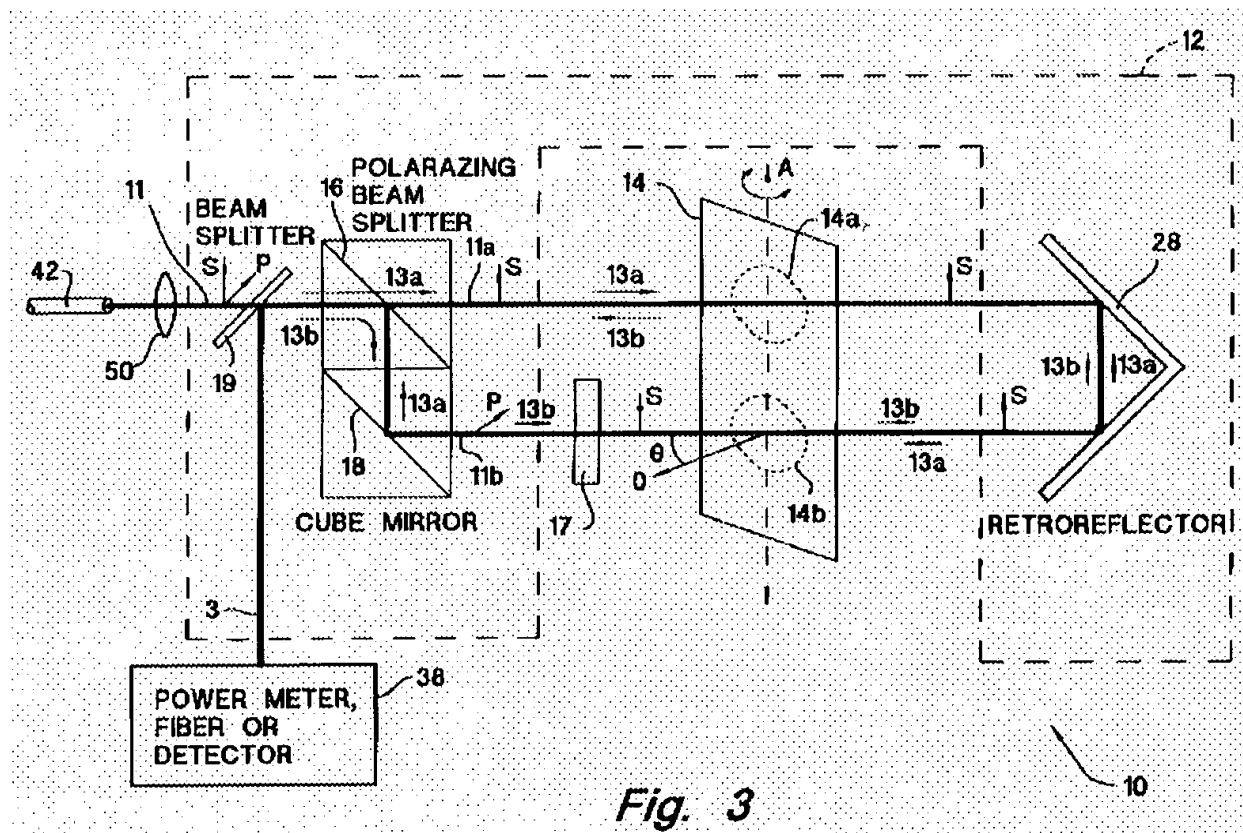
In claims 25 and 26 there is no antecedent basis for "the pair of reflectors".

Antecedent basis for "the pair of reflectors" can be found in claim 24.

Claim Rejections - 35 USC § 102

Claims 12, 13, 17, 18, 21, 28, and 29 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Braun et al(6,075,647).

Braun et al teach an input fiber(42), polarizing beam-splitter(16), corner-cube mirror(18), 1/2 waveplate(17), angularly adjustable interference filter(14), retroreflector(28), and detector(38). See figure 3.



Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 15, 16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braun et al(6,075,647).

Not taught are two detectors or a Fabry-Perot interferometer. Official notice is taken that interference filters include both Fabry-Perot and thin film filters. See In re Malcolm, 1942 C.D 589; 543 O.G. 440.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Braun apparatus with a Fabry-Perot filter as the interference filter as these are known equivalents. Further, the orthogonal outputs of Braun can be measured as a single output or separated, by a polarizing beam-splitter, and measured separately.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Braun et al(6,075,647) in view of Möller et al(ECOC-1999).

Möller et al teach that the end of a polarization maintaining(PM) fiber can be twisted to change the polarization output of the fiber, thus acting as a 1/2 waveplate.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Braun apparatus by replacing the $1/2$ waveplate with a PM fiber and twisting the end of the fiber to change the angle of the polarized beam.

Claims 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braun et al(6,075,647) in view of Sandercock(RCA review-1975).

Sandercock teaches a multipass Fabry-Perot interferometer comprising a tunable Fabry-Perot interferometer and a retroreflector on each side of the Fabry-Perot. See figure 4.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Braun apparatus by replacing the multipass reflection arrangement with the multipass transmission arrangement of Sandercock. This would increase the number of passes through the Fabry-Perot. An additional combining beam-splitter would be needed to combine the beams or two detectors could be used to detect the transmission type output.

Art Unit: 2877

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel A. Turner whose telephone number is 703-308-4803. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached on (703)308-4771. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

A handwritten signature in black ink, appearing to read 'Samuel A. Turner', with a stylized flourish at the end.

Samuel A. Turner
Primary Examiner
Art Unit 2877